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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER				
LEWIS, JUSTIN V				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/589,178

Applicant(s)

HANSEN, ACHIM

Examiner

JUSTIN V. LEWIS

Art Unit

3725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicants' amendment, filed on 17 December 2008, is acknowledged. Amended claims 1-2, 4-10, 12-14, 16-17, 19-25 and 27-29 have been entered. Accordingly, claims 1-30 are currently pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 8, 10, 15-21, 23, 25 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Application Publication No. 2002/0027361 to Hardwick et al. ("Hardwick").

Regarding claim 1, Hardwick anticipates an object of value (security document 1) comprising: i) a carrier layer (see abstract; note that the security document is a bank note); ii) at least one optical security element (see paragraph 37, lines 1-2) which is disposed on the carrier layer (see paragraph 37, lines 2-5) and which has a first layer containing a moiré pattern (see paragraph 22, lines 1-6), and ii) a second layer which contains a moiré analyzer (half-window 18) for the moiré pattern of the first layer and which is arranged above or below the first layer in a fixed position relative to the first layer in such a way that the moiré pattern of the first layer and the moiré analyzer of the second layer are permanently optically superimposed at least in region-wise manner (see configuration in fig. 1; note the spatial relationship between security device 20 and

half-window 18), whereby a moiré image is generated (see figs. 2-3), wherein the moiré pattern is a pattern formed from repeating structures (repeating pattern of lines 22) which, upon superimposition with or in condition of viewing through a further pattern that is formed by repeating structures and that acts as the moiré analyzer, exhibits a new pattern, namely the moiré image, and wherein the moiré image is concealed in the moiré pattern (see paragraph 22).

Regarding claim 2, Hardwick anticipates the object of value according to claim 1, wherein the first layer comprises a printable substance which is disposed at least in region-wise fashion in pattern form of the moiré pattern, in particular on the carrier layer (see paragraph 22).

Regarding claim 3, Hardwick anticipates the object of value according to claim 2, wherein the printable substrate comprises binding agent and color pigments or effect pigments, in particular interference layer pigments or liquid crystal pigments (see paragraph 37, lines 14-15).

Regarding claim 4, Hardwick anticipates the object of value according to claim 1, wherein the first layer comprises a partially shaped metal layer, wherein the metallized or non-metallized regions of the metal layer are shaped in at least region-wise fashion in pattern form in the form of the moiré pattern (see paragraph 22, lines 1-6).

Regarding claim 5, Hardwick anticipates the object of value according to claim 1, wherein the first layer comprises a replication layer in which a surface structure having an optical-diffraction effect is shaped (see paragraph 44, lines 1-4), the moiré pattern being introduced into the surface structure (see paragraph 22, lines 1-6).

Regarding claim 6, Hardwick anticipates the object of value according to claim 5, wherein the surface structure having an optical-diffraction effect contains a hologram or a kinegram (see paragraph 44, lines 1-4) which shows moiré patterns which differ from different viewing angles so that different moiré images are generated in different viewing directions (note that this is an inherent property of moiré patterns).

Regarding claim 8, Hardwick anticipates the object of value according to claim 1, wherein the second layer comprises a printable substance which is disposed at least in region-wise fashion in pattern form in the form of the moiré analyzer, in particular on the first layer or the side of the carrier layer which is in opposite relationship to the first layer (see fig. 1).

Regarding claim 10, Hardwick anticipates the object of value according to claim 1, wherein the first and/or the second layer comprises a partially shaped polarization layer, wherein the polarization layer is shaped at least in region-wise manner in pattern form in the form of the moiré analyzer or the moiré pattern (see paragraph 22).

Regarding claim 15, Hardwick anticipates the object of value according to claim 1, wherein the carrier layer is a paper carrier (see abstract; note that the security document is a bank note).

Regarding claim 16, Hardwick anticipates an object of value comprising: i) a carrier layer (see abstract; note that the security document is a bank note); ii) at least one optical security element (see paragraph 37, lines 1-2) which is disposed on the carrier layer (see paragraph 37, lines 2-5) and which has a first layer containing a moiré pattern (see paragraph 22, lines 1-6); and iii) two or more secondary layers which each

contain a respective moiré analyzer for the moiré pattern of the first layer (see fig. 6), and a first secondary layer is arranged on the same side of the carrier layer as the first layer (see fig. 6) and a second secondary layer is arranged on the opposite side of the carrier layer (see fig. 6) so that a first moiré image is visible when viewed in transmitted light (see paragraph 23, lines 1-5) and a second moiré image is visible when viewed in incident light (see paragraph 57, lines 1-3), wherein a pattern formed by repeating structures acts as the moiré analyzer (see fig. 6).

Regarding claim 17, Hardwick anticipates the object of value according to claim 16, wherein the first layer comprises a printable substance (note that the security document is a "banknote") which is disposed at least in region-wise fashion in pattern form in the form of the moiré pattern, in particular on the carrier layer (see fig. 6).

Regarding claim 18, Hardwick anticipates the object of value according to claim 17, wherein the printable substance comprises binding agent and color pigments or effect pigments, in particular interference layer pigments or liquid crystal pigments (see paragraph 37, lines 14-15).

Regarding claim 19, Hardwick anticipates the object of value according to claim 16, wherein the first layer comprises a partially shaped metal layer, wherein the metallized or non-metallized regions of the metal layer are shaped in at least region-wise fashion in pattern form in the form of the moiré pattern (see paragraph 22, lines 1-6).

Regarding claim 20, Hardwick anticipates the object of value according to claim 16, wherein the first layer comprises a replication layer in which a surface structure

having an optical-diffraction effect is shaped (see paragraph 44, lines 1-4), the moiré pattern being introduced into the surface structure (see paragraph 22, lines 1-6).

Regarding claim 21, Hardwick anticipates the object of value according to claim 20, wherein the surface structure having an optical-diffraction effect contains a hologram or a kinegram (see paragraph 44, lines 1-4) which shows moiré patterns which differ from different viewing angles so that different moiré images are generated in different viewing directions (note that this is an inherent property of moiré patterns).

Regarding claim 23, Hardwick anticipates the object of value according to claim 16, wherein one of the secondary layers comprises a printable substance (note that the security document is a "banknote") which is disposed at least in a region-wise fashion in pattern form in the form of the moiré analyzer, in particular on the first layer or the side of the carrier layer which is in opposite relationship to the first layer (see fig. 1).

Regarding claim 25, Hardwick anticipates the object of value according to claim 16, wherein the first and/or one of the secondary layers comprises a partially shaped polarization layer, wherein the polarization layer is shaped at least in region-wise manner in pattern form in the form of the moiré analyzer or the moiré pattern (see paragraph 22).

Regarding claim 30, Hardwick anticipates the object of value according to claim 16, wherein the carrier layer is transparent or semi-transparent (see half-window area 18, described in paragraph 40).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 7 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardwick in view of U.S. Patent No. 4,892,336 to Kaule et al. ("Kaule").

Regarding claim 7, Hardwick discloses the object of value according to claim 1, but fails to disclose the first layer comprising a partially shaped thin film layer system which produces a color change effect by means of interference, wherein the thin film layer system is shaped at least in region-wise manner in pattern form in the form of the moiré pattern.

Kaule teaches a first layer comprising a partially shaped thin film layer system which produces a color change effect (see col. 5, lines 11-14).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the Kaule security feature into the Hardwick security document, in order to provide an anti-falsification feature which is capable of being easily tested visually without technical aids, as explicitly taught by Kaule (see col. 1, lines 53-59).

Regarding claim 22, Hardwick, as modified by Kaule (in the manner set forth in the rejection of claim 7, above) discloses the object of value according to claim 16, wherein the first layer comprises a partially shaped thin film layer system which produces a color change effect by means of interference, wherein the thin film layer system is shaped at least in region-wise manner in pattern form in the form of the moiré pattern (see the combination set forth in the rejection of claim 7, above).

7. Claims 9 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardwick in view of U.S. Patent Application Publication No. 2003/0003323 to Murakami et al. ("Murakami").

Regarding claim 9, Hardwick discloses the object of value according to claim 8, but fails to disclose the printable substance containing ultraviolet (UV) color pigments or infrared (IR) color pigments so that the moiré image is generated only upon irradiation with UV radiation or upon irradiation with IR radiation.

Murakami teaches a printable substance containing ultraviolet (UV) color pigments or infrared (IR) color pigments so that the moiré image is generated only upon irradiation with UV radiation or upon irradiation with IR radiation (see abstract, lines 1-2).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the Murakami IR particles into the Hardwick security document in order to obtain an anti-falsification effect, as explicitly taught by Murakami (see abstract, lines 24-25).

Regarding claim 24, Hardwick, as modified by Murakami (in the manner set forth in the rejection of claim 9, above), discloses the object of value according to claim 23, wherein the printable substance contains ultraviolet (UV) color pigments or infrared (IR) color pigments so that the moiré image is generated only upon irradiation with UV radiation or upon irradiation with IR radiation (see the combination set forth in the rejection of claim 9, above).

8. Claims 11-13 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardwick in view of U.S. Patent No. 5,712,731 to Drinkwater et al. ("Drinkwater").

Regarding claim 11, Hardwick discloses the object of value according to claim 1, but fails to disclose the second layer being part of a transfer layer of a transfer film which is applied to the first layer or the side of the carrier layer which is in opposite relationship to the first layer.

Drinkwater teaches a second layer being part of a transfer layer of a transfer film which is applied to a first layer or the side of a carrier layer which is in opposite relationship to the first layer (see col. 11, lines 19-28).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the Drinkwater security feature into the Hardwick security

document in order to provide a security feature which is suited to mass production techniques by utilizing the effects of a two-dimensional array of spherical microlesnes, as explicitly taught by Drinkwater (see col. 1, lines 55-58).

Regarding claim 12, Hardwick in view of Drinkwater discloses the object of value according to claim 11, wherein the transfer layer has a partially shaped metal layer, wherein the metallized or non-metallized regions of the metal layer is shaped at least in region-wise manner in pattern form in the form of the moiré analyzer (see Drinkwater col. 11, lines 54-64).

Regarding claim 13, Hardwick in view of Drinkwater discloses the object of value according to claim 11, wherein the transfer layer has a replication layer and a reflection layer, in particular a metal layer, wherein a surface structure having an optical-diffraction effect is shaped into the interference between the replication layer and the reflection layer and the reflection layer is shaped at least in region-wise fashion in pattern form in the form of the moiré analyzer (see Drinkwater col. 11, lines 54-64).

Regarding claim 26, Hardwick, as modified by Drinkwater (in the manner set forth in the rejection of claim 13, above), discloses the object of value according to claim 16, wherein the first secondary layer or the second secondary layer is part of a transfer layer of a transfer film (see the combination set forth in the rejection of claim 11, above).

Regarding claim 27, Hardwick in view of Drinkwater discloses the object of value according to claim 26, wherein the transfer layer has a partially shaped metal layer, wherein the metallized or non-metallized regions of the metal layer are shaped at least

in region-wise manner in pattern form in the form of the moiré analyzer (see Drinkwater col. 11, lines 54-64).

Regarding claim 28, Hardwick in view of Drinkwater discloses the object of value according to claim 26, wherein the transfer layer has a replication layer and a reflection layer, in particular a metal layer, wherein a surface structure having an optical-diffraction effect is shaped into the interface between the replication layer and the reflection layer and the reflection layer is shaped at least in region-wise fashion in pattern form in the form of the moiré analyzer (see Drinkwater col. 11, lines 54-64).

9. Claims 14 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardwick in view of U.S. Patent Application Publication No. 2003/0137145 to Fell et al. ("Fell").

Regarding claim 14, Hardwick discloses the object of value according to claim 1, but fails to disclose the object of value having a loose moiré analyzer which is not arranged in a fixed position relative to the first layer and the second layer and which is so designed that a moiré image is generated when the loose moiré analyzer is brought into overlapping relationship with the first and/or second layer.

Fell teaches a loose moiré analyzer (window 5) which is not arranged in a fixed position relative to the first layer (see fig. 7) and the second layer and which is so designed that a moiré image is generated when the loose moiré analyzer is brought into overlapping relationship with the first and/or second layer (see fig. 8).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to add the Fell separate moiré analyzer to the Hardwick security document

in order to provide a safe and easy means to protect and authenticate it without the need for a specific apparatus and/or for a complex structure, as explicitly taught by Fell (see paragraph 6).

Regarding claim 29, Hardwick as modified by Fell (in the manner set forth in the rejection of claim 14, above), discloses the object of value according to claim 16, wherein the object of value has a loose moiré analyzer which is not arranged in a fixed position relative to the first layer and the second layer and which is so designed that a moiré image is generated when the loose moiré analyzer is brought into overlapping relationship with the first and/or the second layer (see the combination set forth in the rejection of claim 14, above).

Response to Arguments

In response to Applicant's argument that Hardwick fails to teach or suggest using a combination of a moiré pattern and a diffractive structure (see Applicant's Arguments/Remarks pg. 12, lines 1-5), Examiner respectfully directs Applicant to paragraph 23, specifically teaching that different parts of the device are applied to first and second surfaces on both sides of the clear plastics substrate, in which case, the moiré pattern would be applied to the clear plastic, which acts as a diffractive structure.

In response to Applicant's argument that the half-window does not function as a moiré analyzer (see Applicant's Arguments/Remarks pg. 14, lines 1-4), Examiner respectfully directs Applicant to paragraph 25, providing that security stripes may extend through the half-window. Such stripes may be in the form of moiré pattern.

In response to Applicant's argument that Hardwick fails to teach a substrate including a repeating structure that could act as a moiré analyzer (see Applicant's Arguments/Remarks pg. 14, lines 5-11), Examiner directs Applicant to paragraph 25, providing that a plurality of half-windows may be formed.

In response to Applicant's argument that Hardwick fails to teach or suggest superimposed moiré patterns (see Applicant's Arguments/Remarks pg. 15, line 15- pg. 16, line 2), Examiner respectfully asserts that Applicant's claims do not concern such limitation.

In response to Applicant's argument that Hardwick fails to teach or suggest a moiré pattern used in combination with a moiré analyzer (see Applicant's Arguments/Remarks pg. 16, lines 20-23), Examiner respectfully directs Applicant to the forgoing paragraphs.

In response to Applicant's argument that the combination of Hardwick with Kaule is improper because of the manner in which a color change is accomplished (see Applicant's Arguments/Remarks pg. 17, lines 6-16), Examiner respectfully asserts that it has been held that "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

In response to Applicant's argument that the combination of Hardwick with Murakami fails to meet the limitations set forth in claims 9 and 24 (see Applicant's Arguments/Remarks pg. 17, line 17 – pg. 18, line 2), Examiner respectfully directs Applicant to the Murakami abstract, explicitly reading "[a]n infrared fluorescent particles emitting fluorescence upon irradiation with infrared rays..."

In response to Applicant's argument that the combination of Hardwick with Drinkwater fails to disclose a transfer layer having a partially shaped metal layer (see Applicant's Arguments/Remarks pg. 18, lines 3-10), Examiner respectfully directs Applicant to Drinkwater col. 11, lines 19-28 (teaching a plurality of lenses displaying multiple moiré images) and lines 54-65 (teaching a metallised/demetallised layer)

In response to Applicant's argument that the combination of Hardwick with Fell is improper (see Applicant's Arguments/Remarks pg. 18, lines 11-18), Examiner respectfully asserts that the prior and instant rejections explicitly detail the manner in which Fell overcomes the deficiencies of Hardwick.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUSTIN V. LEWIS whose telephone number is (571)270-5052. The examiner can normally be reached on M-F 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dana Ross can be reached on (571) 272-4480. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dana Ross/
Supervisory Patent Examiner, Art Unit 3725
/JVL/